INSTRUCTIONS FOR INSTALLATION, USE AND MAINTENANCE

RAIS RIVA

IMPORTANT INFORMATION

On first lighting the stove you must be careful not to touch the painted surfaces and it is MOST IMPORTANT that the door is kept slightly 'ajar' in order for the door seal and sealant to cure.
This will prevent the door seal sticking to the painted body and becoming damaged.

CLEAN AIR ACT
APPROVED FOR WOOD

We cannot be held responsible for any misprints.

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INTRODUCTION …….. 4
WARRANTY …….. 4
SPECIFICATIONS …….. 5
CONVECTION …… 6
INSTALLATION INSTRUCTIONS …… 7
CHIMNEY ……. 8-9
HEARTH …… 9
INSTALLATION ……..…….. 11
COMMISSIONING AND HANDOVER …… 11
MANUFACTURERS PLATE …… 12
CHANGING THE CHIMNEY CONNECTION …….. 13
INSTALLATION OF THE WALL BRACKET……..……..... 14-17
INSTALLATION DISTANCE TO COMBUSTIBLE WALL …… 18-19
FOR THE INSTALLER …… 20
OPERATING INSTRUCTIONS …….. 26
FUEL ……... 26
DRYING AND STORAGE …… 27
REGULATION OF COMBUSTION AIR …… 27
ROOM VENTILATION AND STOVES …….. 27
USING THE WOOD BURNING STOVE …… 28
FIRST USAGE …… 29
LIGHTING AND FUELLING …… 30-31
CLEANING AND CARE …….. 32
CLEANING OF THE FLUE WAYS …… 33
PROBLEM SOLVING …….. 34
ACCESSORIES AND SPARE PARTS ……. 35
SPARE PART DIAGRAM ……..…….. 36-37

Introduction

Thank you for purchasing a Rais wood burning stove.
These appliances have been approved by SCA / HETAS as intermittent operating appliances for burning wood logs only.
These appliances have been approved for use in Smokeless Zones

A Rais wood burning stove is more than just a heat source: it also shows that you care about design and quality in your home.

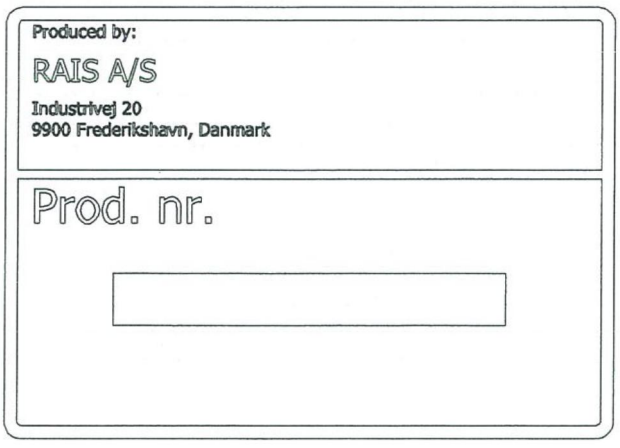
To make the most of your wood burning stove it is important that you read the manual thoroughly before installing and using it.

In the case of warranty coverage, and for general queries regarding your wood burning stove, it is important that you know the stove's production number.
We therefore recommend that you note down the number in the table below.
The production number is located at the back of the stove at the bottom.

Warranty

Your Rais wood burning stove comes with a 5 year warranty.
The warranty, however, does not cover heat-insulating materials, glass and seals.
These are available to order from your local Rais dealer / stockist.

Any alterations made to the stove will void the warranty.



Specifications

	Riva
Nominal output (kW):	**4.5**
Min. / Max. output (kW):	**2 - 7**
Heating area (m^2):	**Ca. 80**
Size, width/depth/height (mm):	**510 / 433 / 838**
Combustion chamber width/depth/height (mm).	**360 / 240 / 380**
Recommended amount of wood when fuelling (kg) (Based on 2 - 3 logs of wood approx. 25cm)	**1.6**
Min. uptake / Min. draught (Pascal):	**-12**
Weight (kg):	**138**
Efficiency (%)	**76**
Particles after NS3058/3059 (g/kg)	**2.5**
Dust measured according to Din+ (mg/Nm^3)	**TBA**
Smoke gas mass flow (g/s):	**6.4**
Smoke gas temperature (°C):	**250**
Intermittent operation:	**Fuelling should be undertaken within 3 hours**

Please Note, this appliance has been tested by the manufacturers and works on a 3m straight flue.

Convection

Rais stoves are convection stoves. This means that the stove's back and side panels are not over-heated. Convection means that there is a circulation of air, which ensures that the heat is distributed more evenly throughout the entire room. The cold air is sucked in at the base of the stove and up through the convection channel, which runs along the stove's combustion chamber. The heated air comes out at the top of the stove, which ensures a circulation of warm air throughout the room.

The stoves are equipped with cool door handles - a Rais special feature - which means you could almost do away with gloves. Be aware, however, that all exterior surfaces become hot during use - so take extreme care.

These instructions together with those in the instruction booklet cover the basic principles to ensure the satisfactory installation of the stove, although detail may need slight modification to suit particular local site conditions.

In all cases the installation must comply with current Building Regulations, Local Authority Byelaws and other specifications or regulations as they affect the installation of the stove.

It should be noted that the Building Regulations requirements may be met by adopting the relevant recommendations given in British Standards BS 8303, BS EN 15287-1:2007 as an alternative means to achieve an equivalent level of performance to that obtained following the guidance given in Approved Document J.

Please note that it is a legal requirement under England and Wales Building Regulations that the installation of the stove is either carried out under Local Authority Building Control approval or is installed by a Competent Person registered with a Government approved Competent Persons Scheme. HETAS Ltd operate such a Scheme and a listing of their Registered Competent Persons can be found on their website at www.hetas.co.uk.

CO Alarms:-

Building regulations require that when ever a new or replacement fixed solid fuel or wood/biomass appliance is installed in a dwelling a carbon monoxide alarm must be fitted in the same room as the appliance. Further guidance on the installation of the carbon monoxide alarm is available in BS EN 50292:2002 and from the alarm manufacturer's instructions.

Provision of an alarm must not be considered a substitute for either installing the appliance correctly or ensuring regular servicing and maintenance of the appliance and chimney system.

HEALTH AND SAFETY PRECAUTIONS

Special care must be taken when installing the stove such that the requirements of the Health and Safety at Work Act are met.

Handling

Adequate facilities must be available for loading, unloading and site handling.

Fire Cement

Some types of fire cement are caustic and should not be allowed to come into contact with the skin. In case of contact wash immediately with plenty of water.

Asbestos

This stove contains no asbestos. If there is a possibility of disturbing any asbestos in the course of installation then please seek specialist guidance and use appropriate protective equipment.

Metal Parts

When installing or servicing this stove care should be taken to avoid the possibility of personal injury.

STOVE PERFORMANCE

In the UK the stove has been approved by HETAS Ltd as an intermittent operating appliance for burning wood logs only.

It should be noted that it is an offence to burn wood logs in this stove if it is installed within a Smoke Control Area in the UK, unless it has been accredited as a Smoke Control Exempt appliance (Check with your supplier/installer).

PREPARATORY WORK AND SAFETY CHECKS
IMPORTANT WARNING

This stove must not be installed into a chimney that serves any other heating appliance. There must not be an extractor fan fitted in the same room as the stove as this can cause the stove to emit fumes into the room.

Chimney

In order for the stove to perform satisfactorily the chimney height must be sufficient to ensure an adequate draught of approximately 15 Pa so as to clear the products of combustion and prevent smoke problems into the room.

NOTE: A chimney height of not less than 4.5 metres measured vertically from the outlet of the stove to the top of the chimney should be satisfactory. Alternatively the calculation procedure given in EN 13384-1 may be used as the basis for deciding whether a particular chimney design will provide sufficient draught.
Please Note, this appliance has been tested by the manufacturers and works on a 3m straight flue.

The outlet from the chimney should be above the roof of the building in accordance with the provisions of Building Regulations Approved Document J.

If installation is into an existing chimney then it must be sound and have no cracks or other faults which might allow fumes into the house. Older properties, especially, may have chimney faults or the cross section may be too large i.e. more than 230 mm x 230 mm. Remedial action should be taken, if required, seeking expert advice, if necessary. If it is found necessary to line the chimney then a flue liner suitable for solid fuel must be used in accordance with Building Regulations Approved Document J.

Any existing chimney must be clear of obstruction and have been swept clean immediately before installation of the stove. If the stove is fitted in place of an open fire then the chimney should be swept one month after installation to clear any soot falls which may have occurred due to the difference in combustion between the stove and the open fire.

If there is no existing chimney then either a prefabricated block chimney in accordance with Building Regulations Approved Document J or a twin walled insulated stainless steel flue to BS 4543 can be used. These chimneys must be fitted in accordance with the manufacturer’s instructions and Building Regulations.

A single wall metal fluepipe is suitable for connecting the stove to the chimney but is not suitable for using for the complete chimney. The chimney and connecting fluepipe must have a minimum diameter of 150 mm and its dimension should be not less than the size of the outlet socket of the stove.

Any bend in the chimney or connecting fluepipe should not exceed 45°.
90° bends should not be used.

Combustible material should not be located where the heat dissipating through the walls of fireplaces or flues could ignite it. Therefore when installing the stove in the presence of combustible materials due account must be taken of the guidance on the separation of combustible material given in Building Regulations Approved Document J and also in these stove instructions.

If it is found that there is excessive draught in the chimney then a draught stabiliser should be fitted. Fitting of a draught stabiliser will affect the requirement for the permanent air supply into the room in which the stove is fitted in accordance with Approved Document J (see also combustion air supply).

Adequate provision e.g. easily accessible soot door or doors must be provided for sweeping the chimney and connecting fluepipe where it is not intended for the chimney to be swept through the appliance, also to permit visual checks on the integrity of the flue when the appliance is serviced.

Hearth
The hearth should be able to accommodate the weight of the stove and its chimney if the chimney is not independently supported. The weight of the stove is indicated in the brochure.

The stove should always be installed on a non-combustible hearth of a size and construction that is in accordance with the provisions of the current Building Regulations Approved Document J.

The clearance distances to combustible material beneath, surrounding or upon the hearth and walls adjacent to the hearth should comply with the guidance on the separation of combustible material given in Building Regulations Approved Document J and also in these stove instructions.

If the stove is to be installed on a combustible floor surface, it must be covered with a non-combustible material at least 12mm thick, in accordance with Building Regulations Approved Document J, to a distance of 30 cm in front of the stove and 15 cm to each side measuring from the door of the combustion chamber.

Combustion air supply
In order for the stove to perform efficiently and safely there should be an adequate air supply into the room in which the stove is installed to provide combustion air. This is particularly necessary if the room is double-glazed or a flue draught stabiliser is operating in the same room as the appliance. It may be necessary to increase the air vent size in property with low air permeability ($\leq$ 5.0 m^3 /(h.m^2).
The provision of air supply to the stove must be in accordance with current Building Regulations Approved Document J. An opening window is not appropriate for this purpose.
IMPORTANT NOTE: If applicable and the appliance is being fitted within an existing fireplace recess, specialist advice should be sought before fitting any permanent ventilation within this area.

Connection to chimney
Stoves may have a choice of either a rear or top flue gas connector that allows connection to either a masonry chimney or a prefabricated factory made insulated metal chimney in accordance with their instructions. In some cases it may be necessary to fit an adaptor to increase the diameter of the flue to the minimum required 150 mm section of the chimney or liner.

Electrical Services
The installation of any electrical services during the installation of this appliance must be carried out by a registered competent electrician and in accordance with the requirements of the latest issue of BS 7671

Carbon Monoxide Alarm
A carbon monoxide alarm complying with BS EN 50292 must be fitted in the same room as the appliance. It should be positioned on the ceiling at least 300mm from any wall or, if it is located on a wall, as high up as possible (above any doors and windows) but not within 150mm of the ceiling. The alarm should also be between 1m and 3m horizontally from the appliance.

Commissioning and handover
Ensure loose parts are fitted in accordance with the instructions given in the instruction booklet.

On completion of the installation allow a suitable period of time for any fire cement and mortar to dry out, when a small fire may be lit and checked to ensure the smoke and fumes are taken from the stove up the chimney and emitted safely to atmosphere. Do not run at full output for at least 24 hours.

On completion of the installation and commissioning ensure that the operating instructions for the stove are left with the customer. Ensure to advise the customer on the correct use of the appliance with the fuels likely to be used on the stove and warn them to use only the recommended fuels for the stove.

Advise the user what to do should smoke or fumes be emitted from the stove. The customer should be warned to use a fireguard to BS 8423:2002 (Replaces BS 6539) in the presence of children, aged and/or infirm persons.

Installation

It is prohibited to carry out unauthorised alterations to the stove.

There must be plenty of fresh air in the room where the stove is being installed, in order to ensure proper combustion. Note that any mechanical exhaust ventilation - e.g. an extraction hood - may reduce the air supply. Any air grilles must be placed in such a manner, that the air supply is not blocked.

Building Regulations Approved Document J gives specific guidance on the required permanent ventilation into the room for combustion air of solid fuel appliances.

The floor structure must be able to carry the weight of the wood burning stove, as well as the weight of a chimney, if necessary.

When you choose where to set up your RAIS wood burning stove, you should consider the heat distribution to the other rooms. This will enable you to get the best use out of your stove.

The stove should be set up at a safe distance from inflammable materials.

See the manufacturer's plate on the wood burning stove.

CE

Producent
RAIS A/S, Industrivej 20, 9900 Frederikshavn, Danmark
09

EN 13240:2001+A2:2004 EC.nr. 410
Anordning til træ

RIVA

Afstand til brændbart, sidevæg	:	350 mm
Afstand til brændbart, møblering	:	1000 mm
CO emission	:	0,10 %
Røggas temperatur	:	250 °C
Nominel effekt	:	4,5 kW
Virkningsgrad	:	76 %
Brændsel (Brug kun anbefalede brændsler)	:	træ

Følg instrukserne i brugermanualen. Anordningen er egnet til røggassamleledning og intervalfyring.

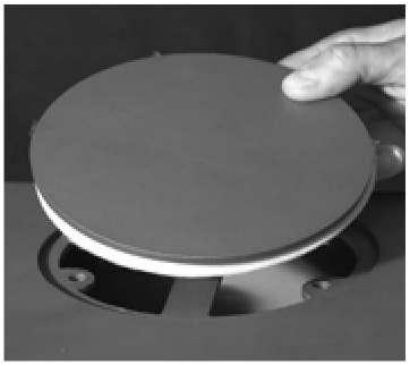
SINTEF
Produktdokumentation

Changing the chimney connection

The stove is delivered ready for top outlet, but may be changed to back outlet in the following way:

Remove the baffle plates

Loosen the three bolts with a spanner



Remove the blank flange and the packing, and position them in the hole at the top. Ensure that the packing is positioned correctly. Screw all elements together with the three M6 nuts.

The flue outlet spigot, which can be found in the stove in a bag, and the holder for the upper flue diverter are assembled with 3 M6 x 20 nuts and bolts.

The upper flue diverter, baffle plate and top plate are assembled in reverse order.

The stove is only to be suspended on a solid non-combustible wall without cracks.
Please contact your local authority concerning the suitability of the wall.
RAIS recommend that the installation of the RAIS RIVA is only done by authorized dealers or installers.

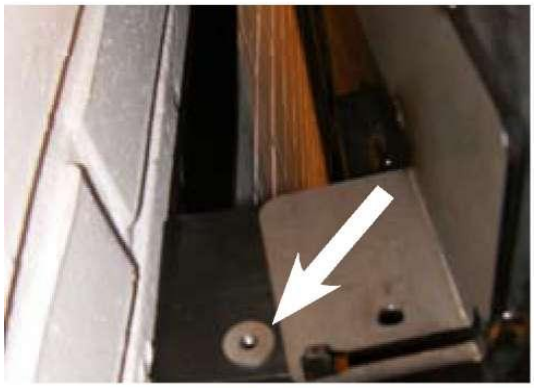
The wall bracket is centred according to the flue pipe in the wall or at the specified distance to the floor.
Put a normal screw in the wall through the centre hole. The top of the bracket to be horizontal.
The holes in the wall to be drilled through the holes in the bracket.
Suitable bolts to be installed in all holes. Maximum two holes to be in a brick.

The fixing to the wall to be made with suitable materials e.g. bolts.
Plastic wall plugs are NOT to be used.
Bolts or other fastening materials are not included in the scope of supply from RAIS.

Position the reflector plate on to the wall bracket.

Lift the burning chamber (without door or panels) onto the wall bracket.

Loosely tighten the mounting bolts.



Check if the top plate of the burning chamber is horizontal.
If necessary place washers between the Brackets, as shown on the pictures, to align the burning chamber relative to the wall.

Fully tighten the mounting bolts.

Lift the side panel onto the guides at the bottom of the stove.

Fasten the top of the side panels with two bolts.

The front panel is mounted using two nuts.

Ensure that the front panel is centralised to the side panels.

Mount the bottom plate with two bolts.

Fit the top plate and carefully fit the door.

Check that the door and air control move smoothly.

Installation distance to combustible wall

To find out whether the wall next to where the stove is going to be installed is flammable, you should contact your building contractor or the local building authorities.

The hearth should be able to accommodate the weight of the stove. The chimney must be independently supported by wall brackets or a ceiling support plate. The weight of the stove is indicated in the brochure.

The stove should always be installed on a non-combustible hearth of a size and construction that is in accordance with the provisions of the current UK Building Regulations Approved Document J.
If the stove is to be installed on a wooden floor, it must be covered with a non-combustible material at least 12mm thick, in accordance with UK Building Regulations Approved Document J, to a distance of 300 mm in front of the stove and 150 mm to each side measuring from the door of the combustion chamber.
The clearance distances to combustible material beneath, surrounding or upon the hearth and walls adjacent to the hearth should comply with the guidance on the separation of combustible material given in UK Building Regulations Approved Document J and also in these stove instructions.

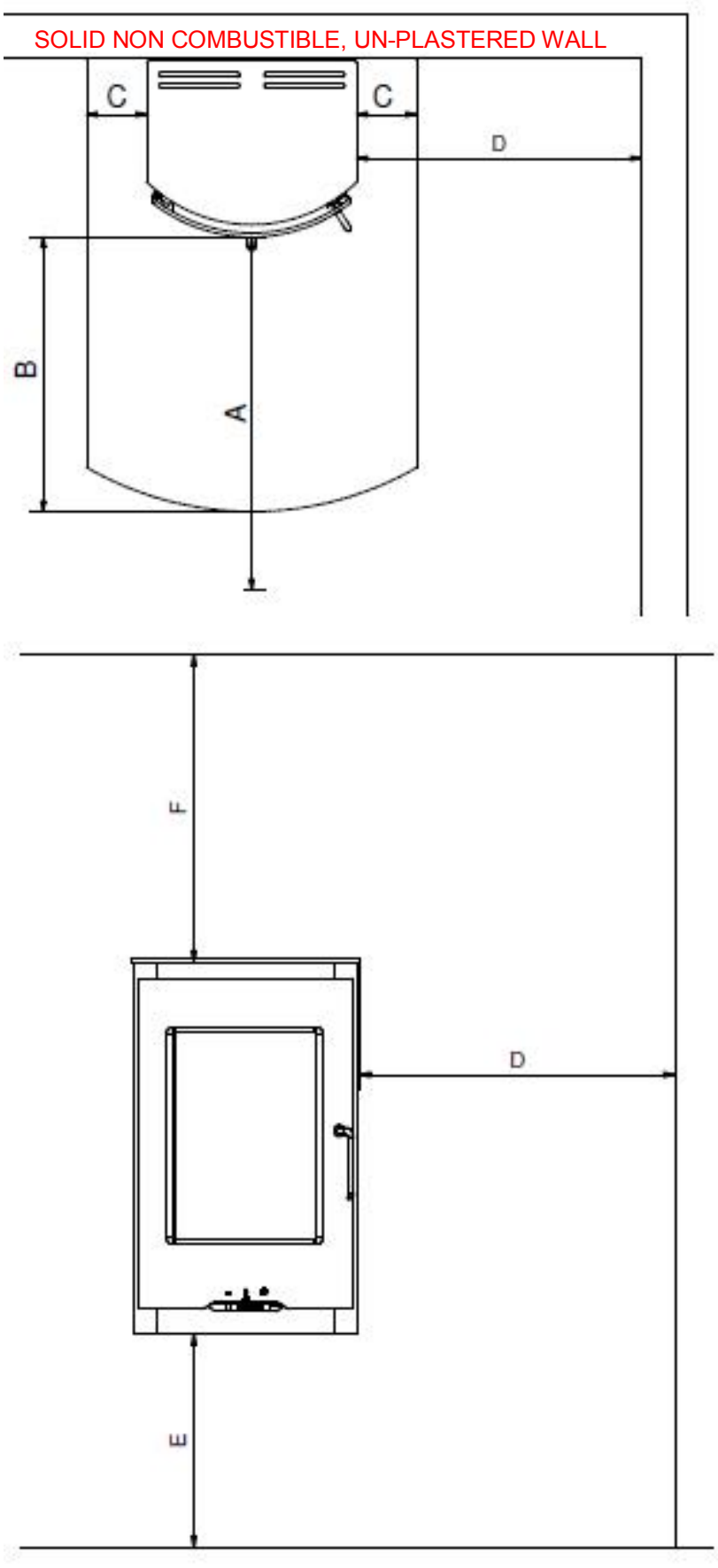
Inform the user that the appliance has been commissioned and ready to use and give instruction on the safe operation of the stove.
These Instructions must be left with the user and the user should be instructed to keep them in a safe place.

		RAIS RIVA
A.	Distance to furniture	1000 mm

Distance to flammable materials:

B.	- in front (floor)	300 mm
C.	- to the side (floor)	150 mm
D.	- to the side of the wall	350 mm
E.	- to the floor	200 mm
F.	- to the ceiling	1000 mm

The appliance MUST be hung on a solid non combustible un-plastered wall, strong enough to hold the weight of the appliance (138kg).



For the Installer

Finally before firing the stove for the first time a check should be made to ensure that the assembly and stove installation has been satisfactory and that there are no leaks in any seals in the appliance and appliance connections to the chimney. Ensure that the appliance and chimney flue are functioning correctly before finally handing over to the user. If necessary read the later parts of this manual for guidance on care required when first lighting.

Inform the user that the appliance has been commissioned and ready to use and give instruction on the safe operation of the stove.

These Instructions must be left with the user and the user should be instructed to keep them in a safe place.

Installation of stove:

NOTE ! A decision must be made concerning the positioning of the inlets and outlets of the convection system. Discolouration of the wall above the doors and the convection air outlets may occur due to convected hot air.

RAIS cannot take responsibility for any building work or consequential damage.

The stove should be inspected for defects at receipt.

Lift the stove from the pallet to the place of installation on to a suitably protected floor. The socket delivered with the stove corresponds with the minimum installation height.
If the stove is installed in a higher position, adjustable extensions can be used.
Accessories are available to order from your Rais dealer / stockist.

Using a spirit level against the door and body of the stove, ensure that the stove is perfectly level and make adjustments using the levelling bolts in the base.

Remove the frame and door from the stove. Be careful not to damage the glass or paint.
Leave the protective tape and plastic on the handles during installation.

Seal the flue pipe on to the flue outlet using fire cement and self tapping screws and connect to the chimney.

Connect the convection air ducts, if required.

The stove is now ready to be built in using either stud walls or solid walls.

When the walls have been finished and decorated, the frame and door can be re-fitted.
Remove all protective plastic and tape prior to commissioning.

The frames are adjusted to the maximum wall thickness at the factory.
The frames can be adjusted from 466mm minimum to 480mm maximum.
Open the door and loosen the bolts at the top and bottom, then gently push the frame back towards the wall.
Check that the frames are parallel to the walls and the doors in the closed position, adjust if necessary.
Re-tighten the bolts at the top and bottom.

Made to measure frames are available to order with the stove from your Rais dealer / stockist.

WARNING NOTE

Properly installed, operated and maintained this stove will not emit fumes into the dwelling. Occasional fumes from de‑ashing and re‑fuelling may occur. However, persistent fume emission is potentially dangerous and must not be tolerated. In the event of fume emission from the appliance, then the following immediate action should be taken: ‑

(a) Open doors and windows to ventilate room and then leave the premises

(b) Let the fire go out

(c) When safe to do so, check for flue or chimney blockage and clean if required

(d) Do not attempt to relight the fire until the cause of the fume emission has been identified and corrected. If necessary seek expert advice.

The most common cause of fume emission is flueway or chimney blockage. For your own safety these must be kept clean at all times.

IMPORTANT NOTES

General
Before lighting the stove check with the installer that the installation work and commissioning checks described in the installation instructions have been carried out correctly and that the chimney has been swept clean, is sound and free from any obstructions. As part of the stoves' commissioning and handover the installer should have shown you how to operate the stove correctly.

CO Alarm
Your installer should have fitted a CO alarm in the same room as the appliance. If the alarm sounds unexpectedly, follow the instructions given under "Warning Note" above.

Use of fireguard
When using the stove in situations where children, aged and/or infirm persons are present a fireguard must be used to prevent accidental contact with the stove. The fireguard should be manufactured in accordance with BS 8423:2002 (Replaces BS 6539).

If the fire is left unattended a spark guard to BS 3248, specification for spark guards for use with solid fuel appliances should be used.

Chimney cleaning
The chimney should be swept at least twice a year. It is important that the flue connection and chimney are swept prior to lighting up after a prolonged shutdown period.

If the stove is fitted in place of an open fire then the chimney will require sweeping after a month of continuous operation. This is a precaution to ensure that any "softer" deposits left from the open fire usage have not been loosened by the higher flue temperatures generated by the closed stove.

In situations where it is not possible to sweep through the stove the installer will have provided alternative means, such as a soot door. After sweeping the chimney the stove flue outlet and the flue pipe connecting the stove to the chimney must be cleaned with a flue brush.

Special Notes for use in a Smoke Control Area (Rais Q-Tee):

Refuelling on to a low fire bed
If there is insufficient burning material in the firebed to light a new fuel charge, excessive smoke emission can occur. Refuelling must be carried out onto a sufficient quantity of glowing embers and ash that the new fuel charge will ignite in a reasonable period. If there are too few embers in the fire bed, add suitable kindling to prevent excessive smoke

Fuel overloading
The maximum amount of fuel specified in this manual should not be exceeded, overloading can cause excess smoke.

Operation with door left open
Operation with the door open can cause excess smoke. The appliance must not be operated with the appliance door left open except as directed in the instructions.

Dampers left open
Operation with the air controls or dampers open can cause excess smoke. The appliance must not be operated with air controls or dampers door left open except as directed in the instructions.

Periods of Prolonged Non-Use
If the stove is to be left unused for a prolonged period of time then it should be given a thorough clean to remove ash and unburned fuel residues. To enable a good flow of air through the appliance to reduce condensation and subsequent damage, leave the air controls fully open.

Extractor fan
There must not be an extractor fan fitted in the same room as the stove as this can cause the stove to emit smoke and fumes into the room.

Aerosol sprays
Do not use an aerosol spray on or near the stove when it is alight.

Use of operating tools
Always use the operating tools provided when handling parts likely to be hot when the stove is in use.

Chimney Fires
If the chimney is thoroughly and regularly swept, chimney fires should not occur. However, if a chimney fire does occur turn off the stove immediately and isolate the mains electricity supply (if applicable), and tightly close the doors of the stove. This should cause the chimney fire to go out. If the chimney fire does not go out when the above action is taken then the fire brigade should be called immediately. Do not relight the stove until the chimney and flueways have been cleaned and examined by a professional.

Permanent air vent
The stove requires a permanent and adequate air supply in order for it to operate safely and efficiently.
In accordance with current Building Regulations the installer may have fitted a permanent air supply vent into the room in which the stove is installed to provide combustion air. This air vent should not under any circumstances be shut off or sealed.

USER OPERATING INSTRUCTIONS - WOOD

Please read the important notices given above before referring to the main instruction book for detailed operating instructions.

HETAS Ltd Approval
HETAS approval may be limited to specific fuel types as detailed in the main instruction manuals. Approval does not cover the use of other fuels either alone or mixed with the recommended fuel, nor does it cover instructions for the use of other fuels.

Recommended fuels
Stoves may be designed to burn dry seasoned wood logs and/or solid mineral fuel as indicated in the main stove manuals.

Door operation
The door handle may become hot during operation, use the tool to open and close the doors, if appropriate.

Lighting of fire
Place some firelighters or paper and dry kindling wood on the grate and cover with a small amount of fuel. Set air controls to maximum and set light to firelighters or paper. Close the doors and allow fire to burn until fuel is well alight then load with more fuel and adjust air controls to the required level of heat output.

Before relighting the fire clean the firebed of ash and clinker and empty the ashpan.

Refuelling
Keep the firebox well filled (the fuel may be sloped up from the front firebars), but do not allow fuel to spill over the top of the front fire bars. Take care that fuel does not project over the front fire bars or damage to the glass may be caused when the doors are closed

Flueway cleaning
It is important that the baffle plate and all the stove flueways are kept clean. When burning smokeless fuels they should be cleaned at least monthly. When burning other fuels they should be cleaned at least once a week, and more frequently if necessary.
Remove any sooty deposits from the baffle plate until they fall off into the fire. More soot will be deposited on the baffle plate and in the flueways if the stove is run at low levels for long periods. If this is the case then more frequent cleaning will be necessary.

Cleaning and maintenance
The instructions detailed in the section “Maintenance” in the instruction booklet should be followed.

Spare Parts
Spare parts can be obtained from Robeys Limited 01773 820 940

Trouble shooting
The instructions detailed in the relevant section in the instruction booklet should be followed together with the following additional items:

1. Fire Will Not Burn

Check that:
a) the air inlet is not obstructed in any way,
b) that chimneys and flueways are clear,
c) that a suitable fuel is being used,
d) that there is an adequate air supply into the room,
e) that an extractor fan is not fitted in the same room as the **fire.**

2. Fire Blazing Out Of Control

Check that:
a) the doors are tightly closed,
b) the air control is turned down to the minimum setting,
c) the air inlet damper is closed and that it is not prevented from closing completely by a piece of ash,
d) a suitable fuel is being used,
e) the door seals are in good condition.

Operating instructions

Please note that HETAS Appliance Approval only covers the use of dry seasoned wood logs on this appliance. HETAS Approval does not cover the use of other fuels either alone or mixed with the wood logs, nor does it cover instructions for the use of other fuels.

Fuel

The stove is designed and approved in accordance with EN 13240 and NS 3058 for stoking split, dried firewood. The firewood must have a water content of 15-22% and its max. length should be the length of the combustion chamber minus 50-60 mm.
Stoking with wet firewood causes both soot, environmental pollution and bad fuel economy. Freshly cut wood contains approx. 50-70% water and is thoroughly unsuitable for stoking. Allow at least 1 year of storage time for newly cut wood before using. Wood with a diameter of more than 100 mm should be split. Regardless of wood size, it should always have at least one surface area free of bark.
We do not recommend stoking with painted, laminated or impregnated wood, wood with a synthetic surface, painted refuse wood, chipboard, plywood, domestic waste, paper bri-quettes and pit coal, as this will produce malodorous smoke, which could be poisonous.
When firing with the above-mentioned items and amounts larger than those recommended, the stove is subjected to a larger amount of heat, which results in a higher chimney temperature and lower efficiency. This can result in the stove and chimney becoming damaged and would void the warranty.
The calorific value of the firewood is closely connected to the moisture level.
Moist firewood has a low heat value. The more water the wood contains, the more energy it takes for this water to vaporise, resulting in this energy being lost.

ONLY USE RECOMMENDED FUELS

The following table shows the calorific value of different types of wood, which have been stored for 2 years and which have a residual moisture of 15 - 17%.

Wood	Kg dry wood pr m^3	compared to beech/oak
Hornbeam	640	110%
Beech and oak	580	100%
Ash	570	98%
Maple	540	93%
Birch	510	88%
Mountain pine	480	83%
Fir	390	67%
Poplar	380	65%

1kg of wood yields the same heat energy irrespective of wood type.
1kg of beech merely takes up less space than 1kg of fir.

Drying and storage

Drying wood takes time: proper air drying takes approximately 2 years.
Here are some tips:
Store the wood sawn, split and stacked in an airy, sunny place, which is protected against rain (the south side of the house is particularly suitable).
Store the firewood stacks at a hand's breadth apart, as this ensures that the air flowing through takes the moisture with it. Avoid covering the firewood stacks with plastic, as this prevents the moisture from escaping. It is a good idea to bring the firewood into the house 2-3 days before you need it.

Regulating the combustion air

All RAIS stoves are equipped with a one-handed operating lever for regulating the damper. The stove-specific regulating mechanisms can be seen on the diagrams.
Primary air is the combustion air added to the primary combustion zone, i.e. the bed of glowing embers. This air, which is cold, is only used in the lighting stage. Secondary air is the air which is added in the gas combustion zone, i.e. air which contributes to the combustion of the pyrolysis gasses (preheated air, which is used for the cleaner glass system and combustion). This air is sucked through the damper under the combustion chamber and is pre-heated through the side channels and then emitted as hot scavenging air onto the glass. The hot air rinses the glass and keeps it soot-free.
The tertiary channel, which can be seen at the top of the combustion chamber towards the back, serves to combust the final gas residues.
By setting the interval between position 1 and 2, the energy content in the firewood is used optimally, as there is oxygen for combustion and for the burning of the pyrolysis gasses. When the flames are a clear yellow the damper has been set correctly. Finding the correct position comes with time after you have used for stove for a while.
It is not recommended that you turn it down completely. A mistake commonly made is shutting the damper too early because it feels too hot. This results in dark smoke emanating from the chimney and in the calorific value of the firewood not being used to its fullest.

Room ventilation and stoves

There must not be an extractor fan fitted in the same room as the stove as this can cause the stove to emit smoke and fumes into the room.
The stove requires a permanent and adequate air supply in order for it to operate safely and efficiently.
In accordance with current Building Regulations the installer may have fitted a permanent air supply vent into the room in which the stove is installed to provide combustion air. This air vent should not under any circumstances be shut off or sealed.

Using the wood burning stove

Adjusting the air damper. The damper has 3 settings.

Position 1

The damper is almost closed meaning that there is a minimal air intake.

Position 2

Pull / push the lever until the first click. This position gives full secondary air.
During normal use the lever is set between position 1 and 2.
When the flames are clear and yellow, the damper is set correctly, i.e. resulting in a slow/optimal burning.

Position 3
Pull / push the lever until the next click.
The air damper is completely open and gives full primary and secondary air. This position is for the lighting stage and is not used under normal operation.

Control

If the ash is white and the walls in the combustion chamber are soot free after the stove has been used, the air regulation was set correctly and the wood was sufficiently dry.

First usage

A careful start pays off. Start with a small fire, so that the wood burning stove can get accustomed to the high temperature. This gives the best start and any damage is avoided.

Be aware that a strange but harmless odour and smoke concoction may emanate from the surface of the stove, the first time you fire up. This is because the paint and materials need to harden. The odour disappears quickly, but you should check the ventilation and draught, if possible. See also, the IMPORTANT warning notice below about persistent fumes.

During this process you must be careful not to touch the painted surfaces, and it is recommended that you regularly open and close the door to prevent the door seal from sticking.

The stove may also produce "clicking noises" during heating and cooling, caused by the large temperature differences which the material is subjected to.
Never use any type of liquid fuel for kindling or maintaining the fire. You could be at risk of explosion.

The stove gets very hot when in use, always wear protective gloves when tending the stove.

If the stove has not been used for a while, follow the steps as if you were using it for the first time.

IMPORTANT - Warning Note!

Properly installed, operated and maintained this appliance will not emit fumes into the dwelling. Occasional fumes from de-ashing and re-fuelling may occur.
However, persistent fume emission is potentially dangerous and must not be tolerated. If fume emission does persist, the following immediate actions should be taken:

(a) Open doors and windows to ventilate room.
(b) Let the fire out or eject and safely dispose of fuel from the appliance.
(c) Check for flue or chimney blockage, and clean if required.
(d) Do not attempt to relight the fire until the cause of the fume emission has been identified and corrected. If necessary seek expert advice.

IMPORTANT - Warning Note!

Do not use an aerosol spray on or near the stove when it is alight.

IMPORTANT - Safety advice!

When using the stove in situations where children, aged and/or infirm persons are present a fireguard must be used to prevent accidental contact with the stove. The fireguard should be manufactured in accordance with BS 8423:2002
(Replaces BS 6539).

Lighting and fuelling "Top-Down" lighting

Start by placing 3-4 pieces wood - approx. 1 ½ - 2 kilogram - in the bottom of the burning chamber.
Place approx. 1 kilogram of dry firewood, split into kindling sticks., and a couple of alcohol briquettes or similar (1-2).
Set the air damper to fully open position.

Light the fire and close the door (3-4).

When the flames are clear - after approx. 10-15 min - close the door completely (5). Damper - see adjustment of air damper.

When the last flames are extinguished and there is a nice layer of embers (5), add 2-3 pieces of wood.

Close the door and once the fire has a good hold closed door completely. Damper - see adjustment of air damper.

After approx. 5 min - or when the flames are clear and stable (6) - close the damper gradually.

Note!!!

Keep an eye on the stove when lighting.
During operation the door should always remain shut.

1

2

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5

6

Cleaning and care

The wood burning stove and the chimney must be serviced by a chimney sweep twice a year.
During cleaning and care, the stove must be cold.

If the glass is sooty:
- Moisten a piece of paper or newspaper, dip it in the ash, and rub the sooty glass with it.
- Now rub with a dry piece of paper and the glass will become clean.
- As an alternative you can use glass cleaner, which you can buy from you RAIS distributor.

Clean the exterior with a dry sponge or a soft brush.

Cleaning the combustion chamber:

Scrape/shovel the ash out and store it in a non-flammable container until it has cooled down. You can dispose of ash with your normal household waste or recycle on the garden.

REMEMBER!!

Never remove all the ashes from the combustion chamber - the wood will burn at its best with a layer of ashes of approx. 20 mm.

Prolonged periods of non-use:

If the stove is to be left unused for a prolonged period of time then it should be given a thorough clean to remove ash and unburned fuel residues. To enable a good flow of air through the appliance to reduce condensation and subsequent damage, leave the air controls fully open.

Prior to a new heating season, it should be checked that the chimney and flue pipe connector are not blocked.

Cleaning of flue way

The flue ways are consist of a smoke converter plate and a smoke chicane. Both parts are made of vermiculite. Handle these parts carefully.

Remove the smoke converter plate by tilting it to one side and turning it a little slantwise. Pull out the plate carefully.

Then remove the smoke baffle by pushing it backwards, tipping it up on one side and turn slightly tilted.

Carefully lift out the smoke baffle.

Remove dirt and dust, and mount the parts in reverse order.

Problem solving

Smoke spillage around door:
- could be due to too low draught in the chimney <12Pa
- check if the flue or chimney is blocked
- check if a extraction hood is switched on; if it is, switch it off and open a window/door in the proximity of the stove for a short while.

Soot on glass:
- could be because the firewood is too wet.
- make sure that the stove is heated properly when firing up, prior to closing the door
- could be because the damper regulation is too low.

A stove burning too strong could be caused by:
- a leak around the door seal
- chimney draught too large >22 Pa, draught control regulator should be installed.

A stove burning too weakly could be caused by:
- too little firewood
- too little air supply for the room ventilation
- dirty smoke channels
- leaking chimney
- leakage between chimney and flue

If your stove continues to malfunction, we recommend that you contact your RAIS distributor or chimney sweep.

IMPORTANT!!

To ensure safe burning there must be clear yellow flames or clear embers at all times. The firewood should not be smouldering. Therefore you should never completely cut off the air supply.

WARNING!!

In case of chimney fire:
- shut off all air supply on the wood burning stove
- contact the fire services
- never attempt to put out fire with water!
- afterwards, you should ask your chimney sweep to check the stove and chimney

Accessories and spare parts

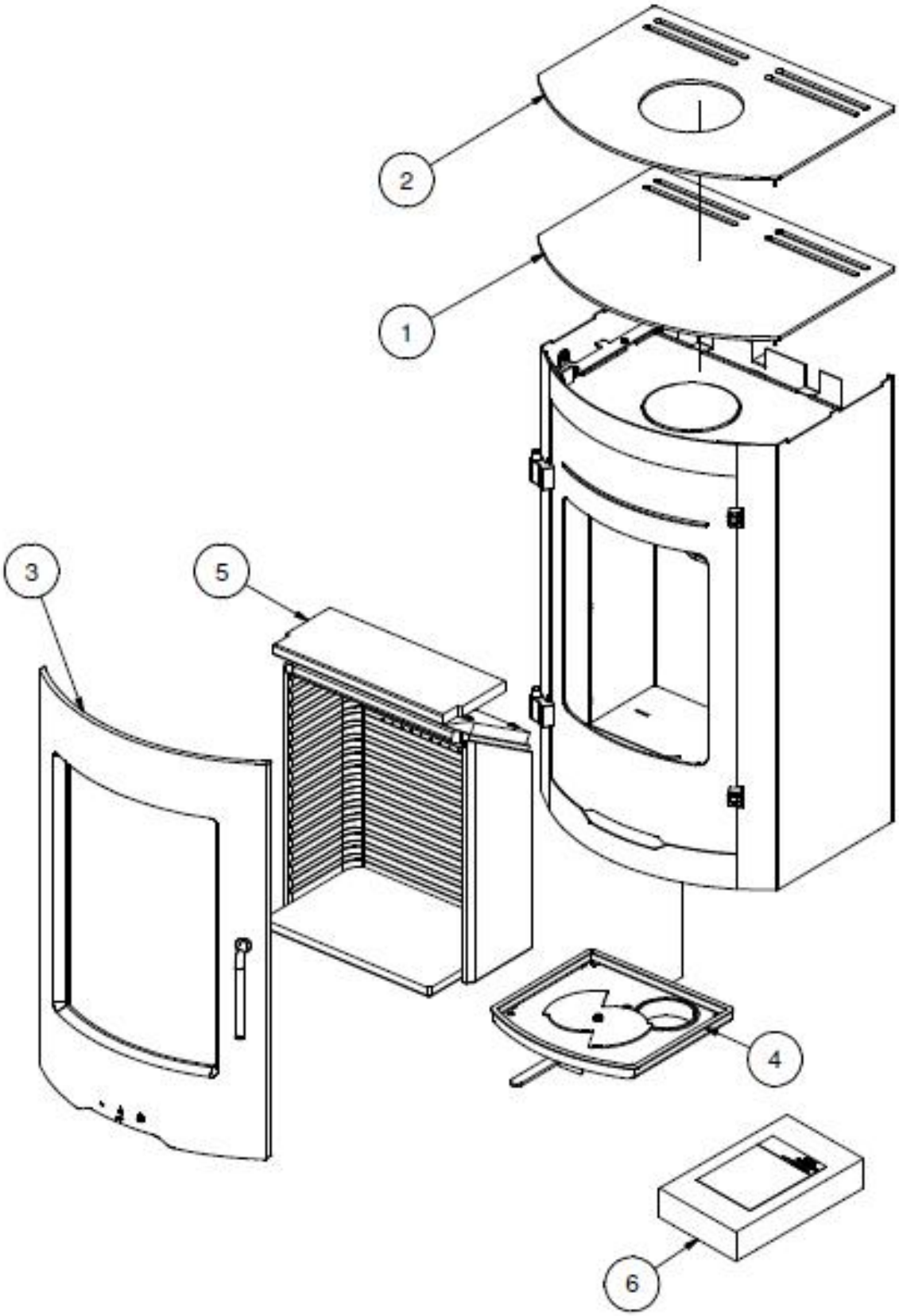
If spare parts other than those recommended by RAIS are used, the warranty is voided.

All replacement spare parts can be purchased from your RAIS distributor / stockist.

See the following spare parts diagrams for the individual products.

Spare parts diagram - Rais Riva

Pos./Ref.	Quantity	Part no.:	Description
1	1	410060190 / 95	Top plate without hole
2	1	410060290 / 95	Top plate with hole
3	1	2101090 / 95	Door
4	1	2100990	Air system
5	1	2102200	Firebrick set
6		2105500	Seal set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